

STATIC



September-October 2007

BATTERIES

Alan Applegate (K0BG)

(Continued From May 2007 Static)

Mobile Applications

In the vast majority of mobile installations, the vehicle's SLI battery is enough. However, if you run an amplifier, it is often less expensive and advantageous to use a trunk-mounted, parallel-connected, properly fused, second battery to better handle the peak current demands. In these cases, an AGM (an SLI rated battery in this application) is the only correct solution. Using a flooded lead-acid battery in this application is asking for serious trouble. Incidentally, mixing flooded and AGM batteries is not problematic unless there is a great disparity in their ages. In other words, don't mix new with old. Contrary to popular opinion, isolation is not necessary or advised for most mobile operation. Unless...

If your mobile application is stationary (at a camp site for example), then an RC battery is the correct selection. Some form of isolation between the vehicle's SLI battery and the RC battery is thus required, least you end up not being able to start your engine. A battery isolator is preferred over a relay arrangement. This said, not all battery isolators are created equal.

Most are inexpensive units utilizing large, encapsulated diodes. The problem with them is, the forward voltage drop is between .7 and 1.0 volts depending on the load. As a result, the batteries never recharge to their full level. Some isolators, like the [Hellroaring](#) units, use power FETs to bypass the diodes when the alternator is operating, thus avoiding this shortfall. The shortfall could also be avoided if alternator regulators were adjustable, but this is a very rare case.

There are a couple of important items to keep in mind when using any isolation technique. First, some automobile engine control strategies (Honda, Toyota, et. al.) use the alternator current and voltage levels as data inputs. Suddenly connecting a second battery can cause fault codes to be written to the OBD II memory, which will turn on the Check Engine light. (cont. page 3)

LBARA MEETING SCHEDULE

MONTH	BOARD	REGULAR
OCTOBER	NOTE: BOARD	10/18
NOVEMBER	MEETINGS WILL NOW	11/15
DECEMBER	TAKE PLACE ONE	12/20
JANUARY	HOUR PRIOR TO THE	1/17
FEBUARY	REGULAR MEETING	2/21

SILENT KEYS

LBARA LOST TWO MEMBERS THIS PAST SUMMER

GLEN STAUGARRD, W7GPS

LBARA'S NET CONTROL

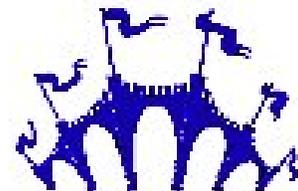
DAVE HOLME, N7DRH

ASSISTANT EC, LA PAZ COUNTY

REST IN PEACE

Monday Night Net (7 PM)

System	Location	Freq	Offset	PL
MCARS	Bullhead City	145.27	-	131.8
	Kingman	146.76	-	131.8
	Kingman	448.25	-	131.8
	Lake Havasu	146.62	-	131.8
	Willow Beach	147.12	-	131.8
CRRRA	Lake Havasu City	146.96	-	162.2
	Lake Havasu City	224.24	-	156.7
	Lake Havasu City	146.64	-	156.7
	Lake Havasu City	449.95	-	141.3
BARN	Lake Havasu City	447.54	-	136.5
	Las Vegas, NV	449.95		136.5
	Onyx(Palm Springs)	449.34	-	136.5
	Orange County, CA	447.54	-	100



BATTERIES (cont. from page 1)

Secondly, most alternator circuits incorporate a fuse. It is possible to draw enough current to blow this fuse, if you suddenly connect a fully discharged RC battery to the charging circuit. Obviously you should keep a spare fuse on hand, and you should also follow Hellroaring's recommendation about delaying the FET closure until the current and voltage stabilize. If you need more information about this, go to their web site.

Battery Boosters

These devices use a switching power supply design to boost the battery voltage to a nominal 13.8 volts regardless of the actual battery voltage. They're popular because most newer model transceivers will shutdown if the supply voltage drops below 11.5 or so. Boosters allow a lead-acid battery to be taken down to their 100% discharge point of 10.5 volts (and beyond).

All too often, these devices do not have an automatic shut-off feature to keep the battery voltage from dropping below 10.5 volts. If you use one, it behooves you to keep an eye on the voltage level, least you end up with a greatly reduced Life Cycle and/or a ruined battery.

Miscellany

If you discharge a lead-acid battery to 10.5 volts at say 10 amps, and remove the load, the battery voltage will climb back up. It may even reach a static charge level of about 12.2 volts. Don't be fooled into thinking you can reduce the load, and still keep using the battery. While this might be okay in an emergency situation, you're damaging the battery's Life Cycle.

Some folks inanely buy marine batteries because they have screw terminals. Apparently they don't realize adapters are readily available to convert any post type, to another post type. Fact is, a lot of newer designs have both side and post connections, and adapters are available to convert either of them to screw terminals.

In a recent QST article, one enterprising amateur concluded the cheap-appearing, plated steel, factory battery connections were inferior to the older type lead based connectors. If he would have had a means of measuring the voltage drop under load, he would have discovered the opposite is true. He replaced them with some after-market units which used set screws. These are even more lossy than any of the other types, albeit the difference is small.

A simple method to attach wires to your SLI battery is to trot down to your local Ace hardware, and buy a metric nut to screw on the existing clamp bolt. In most cases, the bolts are .9 mm in diameter (.23 inches), which allows 1/4 inch holed lugs to be used.

Lead-acid batteries should be kept in approved battery boxes for obvious reasons. Boxes for 1, 2, 3, and even 6 batteries are widely marketed. Most auto parts store carry at least one style of battery box. Prices start as low as \$15.

Short circuit a good-quality lead-acid battery, and the supplied current can be as high as 3,000 amps, albeit briefly. Even a cheap one will do 800 to 900 amps for nearly a minute. Doing so usually causes them to explode violently, slinging sulfuric acid hither and yon. Proper fusing and proper handling will prevent this occurrence.

When removing batteries, the negative connection should be removed first, then the positive. Use the reverse order when installing them. This procedure lessens the chance of short circuiting the battery against some metal part of the vehicle. (cont. on page 5)

SOME SCENES FROM WILLIAMS, ARIZONA ARCA'S HAMFEST



Wonder who took home the Yaesu FT-857D Grand Prize this year? He should be smiling more than this! It's Dick, W7DXJ.



Wonder who didn't win anything? Well, here's one of them.....Russ, K7RUS. Just give it another try next year Rus!



THINGS I'VE LEARNED AS I'VE MATURED

I've learned that you cannot make someone love you. All you can do is stalk them and hope they panic and give in.

I've learned that no matter how much I care, some people are just a##holes.

I've learned that it takes years to build up trust, and it only takes suspicion, not proof, to destroy it.

I've learned that you can keep vomiting long after you think you're finished.

I've learned that regardless of how hot and steamy a relationship is at first, the passion fades, and there better be a lot of money to take its place!

UPCOMING ACTIVITIES AND HAMFESTS

PACIFICON 2007—October 19-21, San Ramon Marriott Hotel, San Ramon, CA—www.PACIFICON.org

Cochise Amateur Radio Club Hamfest—November 3rd—www.k7rdg.org

Superstition ARC Hamfest—December 1—Maricopa Community College, Mesa, AZ—www.wb7tjd.org

BATTERIES (cont. from page 3)

All batteries, whether or not they are lead-acid, should be discarded properly. Most retailers will recycle your used batteries for free, even if you didn't purchase new ones from them. It's their contribution to staying *green*.

Conclusion

What you've read here is not all-inclusive, nor could it be. Every battery manufacturer has their own trade secrets, processes, and construction techniques which makes every battery brand a little different than another. The best place to learn about batteries is to start with the aforementioned web sites.

Lastly, don't assume one specific type is all inclusive for your application. Doing so is surely to cost more than selecting the correct one the first time around.

Alan, KØBG
www.k0bg.com

ATTENTION!!!!!!!

CLUB AUCTION

LBARA WILL HOLD ANOTHER EQUIPMENT AUCTION AT OCTOBER'S CLUB MEETING ON THURSDAY, OCTOBER 18TH. THIS ACTION PROMISES TO BE LARGER THAN LAST SPRING'S AUCTION. LOTS AND LOTS OF GOODIES!

FOR SALE/TRADE

ALINCO DX70 MOBILE TRANSCEIVER - 100 w, 166-6m, CW filter, Removable Face Plate, Jim Varner, AE6N, 680.7259

AN OPEN LETTER TO ALL ARIZONA HAMS

Greetings Fellow Amateur Radio Operators:

This July, I was again elected as Chairman of the Amateur Radio Council of Arizona (ARCA). During the next year I plan to do my best to promote amateur radio and ARCA to the fullest. The Arizona State Convention Hamfest for next year is presently scheduled for 18-20 July 2008 in Williams.

To accomplish my goal of returning this activity to a large and quality event, I am going to need the help of all the clubs and each amateur radio individual in the state. We need to get the Williams hamfest back to a major event (i.e. State Convention) that will draw a lot of people from around our state and the southwest. I am not sure what happened to cause the decline, but the past cannot be changed. We need to make sure that the past mistakes are not repeated and the good things we have done in the past are carried forward.

A little history on why the hamfest was moved from Flagstaff to Williams. The Coconino county fairgrounds were continuing to raise our cost each year while not maintaining the grounds, making repairs, or upgrading facilities. At the rate of increasing cost, ARCA would have been required to raise the cost of each outside spot to \$50.00, charge an entrance fee of \$5.00 each person, and raise the inside spots over \$150.00 each. ARCA's expenses were starting to outpace the income. Hams, being a thrifty bunch, would have balked at this additional cost and we would have lost a lot of people and vendors with this additional expense. By moving to Williams (only 30 miles away) we have been able to maintain (and in a few cases lower) the cost of vendor spots and have not needed to charge an entrance fee. The town of Williams has made significant progress in the repair and upgrade to the fairgrounds and are planning more upgrades in the near future. It appears that the cost of the motel's and food is less expensive than Flagstaff. Williams has great RV facilities and when the forest is open for use (this we cannot control) there is adequate RV parking within easy driving distance.

I need your help in trying to get commercial vendors to return to our hamfest. The inside area is about the same size as was before and has a roof that does not leak. There is adequate electricity and the cement floor is excellent with several telephone lines for credit card use. I am sure it is going to be hard to get commercial vendors back because of the convenience of "On-Line Shopping" and the cost of travel. Most companies selling amateur radio equipment make a large part of their profit using the internet. Packing up supplies, traveling to Williams, setting up, and then returning back home is a large expense that will eat into the company profit.. This is where I am asking for the help of everyone. Many of you have home based business that involves amateur radio and other products. By setting up at the hamfest you can sell your products and advertise also. Many of you know of a vendor that may be willing to participate. If so, please let me know and I will make the contact and show him/her the advantage of coming to our event.

I cannot do this alone. I need the help of everyone. I am open to all suggestions on how to make the Arizona State Hamfest a great event that everyone will want to attend. Please let me know your thoughts on how to improve this event and return this State Hamfest to its former glory. It is not going to be easy but all of us together can make it happen.

Clifford Hauser KD6XH

ARCA Chair

ARRL Assistant Section Manager Arizona

kd6xh@comcast.net

520 744-9095 home

520 235-7393 mobile

520 794-8285 work

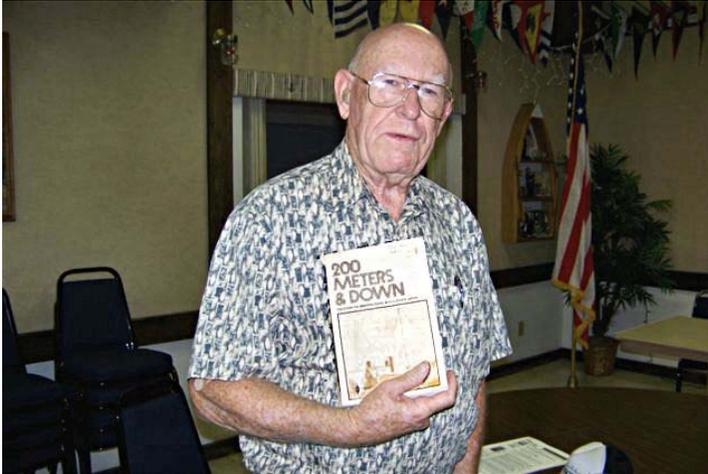
LBARA NEEDS YOUR HELP

**OFFICIALS FOR THE ANNUAL LONDON BRIDGE DAYS PARADE
ON OCTOBER 27TH HAVE ASKED FOR THE CLUB'S HELP ONCE
AGAIN TO PROVIDE COMMUNICATION.**

PLEASE CONTACT BOB GILBERTSON, K6BBB, #714.337.1416

A LITTLE HAM RADIO HISTORY

If you failed to attend the September LBARA meeting, you missed a great presentation on the historical beginnings of ham radio in the United States. Jim Varner, AE6N, took us through the birth of ham radio and up through the war years.



Jim loves his CW and is a QRP enthusiast.

(hummm...I wonder is there is any truth to the rumor that he still fires up the old spark transmitter on Straight Key Night!)

THINGS I'VE LEARNED AS I'VE MATURED

I've learned that you shouldn't compare yourself to others—they are more screwed up than you think!

I've learned that we are responsible for what we do, unless we are celebrities.

I've learned that 99% of the time when something isn't working in your house, one of your kids did it!

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VISIT OUR WEBSITE

www.lbara.net

FROM THE EDITOR

If you have anything you would like to see included in these issues, please let me know. I'm always looking for articles, news items, construction articles, or anything that might be of interest to our readers. You can contact me at 928.855.7941 or email at grf@uneespeed.net or francej@ajsinsurance.com.

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STATIC

ATTENTION READERS

Please note that this issue represents a “work-in-progress” and there are a number of changes to be made in subsequent issues. I would greatly appreciate your comments, both good and bad, as well as any suggestions for future issues. This issue also begins our first attempt to deliver the **STATIC** to your doorstep electronically. Please keep me abreast of any email address changes you may have and I promise to have this delivered promptly and accurately. Also, I still have a number of articles awaiting publication and will do so in the future. This is your newsletter, so keep the articles, letters, and pictures coming. I can be reached at home (855.7941), at work (855.3081) or via email at grf@uneespeed.net .

EQUIPMENT FOR SALE

EDITOR'S NOTE: List your items for sale here. Ham radio related only, please. Include a picture if you like (please use a jpg format). Email all to me at grf@uneespeed.net) along with your name and phone number.

